

WHAT IS CLAIMED:

1. A liquid dispensing valve assembly with a vacuum release feature, said valve assembly adapted to be fastened to a container opening, said valve assembly comprising:

a unitarily formed one-piece cylindrical base having a vertical center axis comprising,

a mounting collar,

an enclosure portion connected to said mounting collar forming an inner cavity within said base,

a spout connected to said enclosure portion having an interconnected axial core substantially positioned within said spout forming an annular liquid passageway, and

a gas passageway having at least one inlet orifice located on an outer surface of said spout, said gas passageway comprising at least one generally horizontally oriented radial pipe section having one end connected to said at least one inlet orifice and another end connecting to a vertically configured pipe section having an exit orifice; and

a cap having a drain port, said cap adapted to slip fit over said spout.

2. The dispensing valve assembly according to claim 1, said vertically configured pipe section aligned about the vertical center axis.

3. The dispensing valve assembly according to claim 1, said pipe extension connected to a bottom side of said axial core.

4. The dispensing valve assembly according to claim 1, said axial core interconnected to an inner surface of said spout by at least one radial oriented support rib, said at least one generally horizontally oriented radial pipe section being internally molded within said at least one radial oriented support rib.

5. The dispensing valve assembly according to claim 1,

wherein the container has a hermetic seal applied to the opening,

wherein said base is adapted to be fastened to the container opening having the hermetic seal applied thereto, and

wherein said exit orifice of said vertically oriented pipe section is positioned above the seal on the opening of the container when said base is secured to the container such that the hermetic seal is not punctured.

6. The dispensing valve assembly according to claim 1, wherein said one-piece base is formed by injection molding.

7. The dispensing valve assembly according to claim 1, said gas passageway having a T-shape.

8. The dispensing valve according to claim 1, said at least one generally horizontally oriented radial pipe section having two opposing inlet orifices radially spaced 180 degrees apart, and connected to said vertically oriented pipe section at the center axis.

9. The dispensing valve assembly according to claim 1, said at least one generally horizontally oriented radial pipe section comprising three radial pipe sections radially spaced 120 degrees apart which intersect at the center axis of said base and connect to said vertically oriented pipe section at the center axis.

10. The dispensing valve assembly according to claim 1, wherein said gas passageway may be jetted and the flow rate of the air into the container may be controlled according to the number radial pipe sections comprising the at least one generally horizontally oriented radial pipe section.

11. The dispensing valve assembly according to claim 1, wherein said gas passageway may be jetted and the flow rate of the air into the container may be controlled according to the diameter of the at least one generally horizontally oriented radial pipe section and said vertically oriented pipe section.

12. The dispensing valve assembly according to claim 1, wherein when said cap is pulled upward to an open position, simultaneously, (1) said annular liquid passageway is opened so that liquid may be expelled from said container, and (2) said at least one inlet orifice is unobstructed so that gas may enter the container via said gas passageway.

13. The dispensing valve assembly according to claim 1, wherein when said cap is pushed downward to a closed position, simultaneously, (1) said annular liquid passageway is closed so that liquid may not be expelled from said container, and (2) said at least one inlet orifice is obstructed so that gas may not enter the container via said gas passageway.

14. A liquid dispensing valve with a vacuum release feature for a liquid container comprising:

a one-piece injection molded mounting base, said base comprising,

a cylindrical mounting collar;

an enclosure portion connected to a top edge of said mounting collar forming an inner cavity within said base;

a spout having a first cylindrical portion positioned above said enclosure portion and about a center axis of said base, said first cylindrical portion connected to a top surface of said enclosure portion, said first cylindrical portion having a distal dispensing tip, said spout having an inner axial core positioned within an upper portion of said first cylindrical portion forming an annular liquid passageway, said core fastened to an inner radial surface of said first cylindrical portion with radial oriented support ribs, wherein liquid flows from said inner cavity through said annular liquid passageway and exits from an annular opening at said dispensing tip;

a gas passageway separate from said annular passageway, having at least one inlet orifice located on an outer surface of said first cylindrical portion, a radial pipe section of said gas passageway being integrally formed within at least one of said radial ribs and within said inner axial core of said spout, said gas passageway further routed through a pipe extension having an exit orifice, said pipe extension attached to a bottom side of said core along the center axis of said base and projecting downward into said inner cavity; and

a cap having a second cylindrical portion and top portion with a drain port, said cap slip-fit over said spout and adapted to be pulled upward to simultaneously open said liquid and gas passageways, adapted to be pushed downward to close said liquid and gas passageways simultaneously, wherein said core protrudes through said drain port to prevent liquid flow when said cap is pushed downward, and wherein an inner radial wall of said second cylindrical portion blocks the at least one inlet orifice preventing gas flow.

15. The dispensing valve according to claim 14, said base adapted to accept a hermetically-sealed container opening without puncturing the seal.

16. The dispensing valve according to claim 14, further comprising receiving threads on an inside surface of said mounting portion, said threads adapted to be screwed onto a threaded container top.

17. The dispensing valve according to claim 14, wherein said section of said gas passageway integrally formed within at least one of said radial ribs comprises a radial

pipe section, forming a T-shaped gas passageway with said pipe extension having two opposing inlet orifices radially spaced 180 degrees apart.

18. The dispensing valve according to claim 14, wherein said radial pipe section is integrally formed within at least one of said radial ribs comprises three path sections radially spaced 120 degrees apart.

19. The dispensing valve according to claim 14, wherein a ratio, comparing a total length of the gas passageway to an inner diameter of the gas passageway, wherein the ratio is great enough to ensure unrestricted air flow into the bottle yet prevent gas from flowing into the annular liquid passageway

20. A hermetically-sealed liquid container in combination with a fluid dispensing valve having a vacuum release feature for a liquid container comprising:

- a liquid container having an outlet with a hermetic seal attached flush with said outlet;

- a liquid dispensing valve, with a vacuum release feature, fastened to said fluid container outlet, said valve comprising,

- a one piece injection molded mounting base, said base comprising,

- a cylindrical mounting collar;

- an enclosure portion connected to a top edge of said mounting collar forming an inner cavity within said base;

- a spout having a first cylindrical portion positioned above said enclosure portion and about a center axis of said base, said first cylindrical portion connected to a top surface of said enclosure portion, said first cylindrical portion having a distal dispensing tip, said spout having an inner axial core positioned within an upper portion of said first cylindrical portion forming an annular liquid passageway, said core fastened to an inner radial surface of said first cylindrical portion with radial oriented support ribs, wherein liquid flows from said inner cavity through said annular liquid passageway and exits from an annular opening at said dispensing tip;

- a gas passageway separate from said annular passageway, having at least one inlet orifice located on an outer surface of said first cylindrical portion, a section of said gas passageway being integrally formed within at least one of said radial ribs and within said inner axial core of said spout, said gas passageway further routed

through a pipe extension having an exit orifice, said pipe extension attached to a bottom side of said core along the center axis of said base and projecting downward into said inner cavity, wherein said exit orifice of said pipe extension is located above said hermetic seal on said outlet of said container therefore preventing puncture of said hermetic seal when said mounting base is installed on said container; and

a cap having a second cylindrical portion and top portion with a drain port, said cap slip-fit over said spout and adapted to be pulled upward to simultaneously open said liquid and gas passageways, adapted to be pushed downward to close said liquid and gas passageways simultaneously, wherein said core protrudes through said drain port to prevent liquid flow when said cap is pushed downward, and wherein an inner radial wall of said second cylindrical portion blocks the at least one inlet orifice preventing gas flow.

21. A process for providing a hermetically-sealed container with a dispensing valve having a vacuum release feature comprising:

forming a one-piece base, positioned about a center axis, by injection molding, the base adapted to receive an opening of a container having a hermetic seal, the base comprising,

a mounting collar,

an enclosure portion connected to said mounting collar forming an inner cavity within the base,

a spout connected to said enclosure portion having an interconnected axial core substantially positioned within the spout forming an annular liquid passageway, and

a gas passageway having at least one inlet orifice located on an outer surface of the spout, the gas passageway comprising at least one horizontally oriented radial pipe section having one end connected to the at least one inlet orifice and another end connecting to a vertically oriented pipe extension having an exit orifice;

slip fitting a cap having a drain port over the spout;

installing a hermetic seal on the opening of the container; and

fastening the mounting collar to the opening of the container without puncturing the hermetic seal.

22. A unitarily formed one-piece cylindrical base comprising:

a mounting collar;

an enclosure portion connected to said mounting collar forming an inner cavity within said base;

a spout connected to said enclosure portion having an interconnected axial core substantially positioned within said spout forming an annular liquid passageway; and

a gas passageway having at least one inlet orifice located on an outer surface of said spout, said gas passageway comprising at least one generally horizontally oriented radial pipe section having one end connected to said at least one inlet orifice and another end connecting to a vertically configured pipe section having an exit orifice.

23. The base according to claim 22, said vertically configured pipe section aligned about the vertical center axis.

24 The base according to claim 23, said axial core interconnected to an inner surface of said spout by at least one radial oriented support rib, said at least one generally horizontally oriented radial pipe section being internally molded within said at least one radial oriented support rib.

25. The base according to claim 24, said at least one generally horizontally oriented radial pipe section having two opposing inlet orifices radially spaced 180 degrees apart, and connected to said vertically oriented pipe section at the center axis.

26. The base according to claim 25, said at least one generally horizontally oriented radial pipe section comprising three radial pipe sections radially spaced 120 degrees apart which intersect at the center axis of said base and connect to said vertically oriented pipe section at the center axis.